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CHARACTERIZATION OF TWO ORE SAMPLES COLLECTED FROM NOVA SCOTIA OFF-SHORE SEA BED

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CHARACTERIZATION OF TWO ORE SAMPLES COLLECTED FROM NOVA SCOTIA OFF-SHORE SEA BED

by

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ABSTRACT

A study was initiated to evaluate the possibility of recovering gold from Nova Scotia off-shore sea bed. Two samples were collected and analysed for Au, Ag and other elements of possible economic value. Sieve analysis and assays on sieve fractions were carried out to evaluate the gold and silver distribution in the ore samples. All the assays and determinations consistently indicated that the metals concentration, including gold, in these samples was too low to present any economic interest.

Following these findings the research work to recover gold from Nova Scotia off-shore samples was discontinued.

Keywords: gold, Nova Scotia off shore sea bed, screen analysis, XRF analysis.

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CARACTÉRISATION DE DEUX ÉCHANTILLONS PROVENANT DE DÉPÔTS MARINS PRÈS DE LA CÔTE DE NOUVELLE-ÉCOSSE

par

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RÉSUMÉ

Une étude fut entreprise afin d'évaluer la possibilité de récupérer l'or d'un dépôt marin situé près de la côte de la Nouvelle-Écosse. Deux échantillons furent prélevés et analysés pour leur contenu en Au, Ag et autres éléments d'intérêt économique.

Des analyses chimiques et granulométriques ont été effectuées sur chaque échantillon pour en déterminer la distribution de l'or et de l'argent. Tous les résultats des analyses ont indiqué que la teneur en métaux (l'or inclus) de ces échantillons était trop faible pour présenter un intérêt économique.

Suite à ces données, les recherches sur la récupération de l'or, des échantillons provenant des dépôts marins de la Nouvelle-Écosse, ont été interrompues.

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INTRODUCTION

Early in 1988 Gedoro Mining agreed with Energy Mines and Resources and Nova Scotia Department of Mines and Energy on the general terms for a cooperative venture to identify the potential for gold mining off-shore of Nova Scotia.

On the basis of seismic surveys performed by Atlantic Geoscience Centre and divers' observations, two areas of possible gold concentration were selected and sampled by Gedoro Mining during the summer of 1988. The areas are identified as East Point Ledge and Blue Rocks.

The samples were shipped to CANMET for physico-chemical characterization and testwork to evaluate the possibility of gold extraction.

However, the assays performed on these samples indicated that the content of gold, silver and other useful metals is too low to present any economic value.

Following these findings the work on the off-shore samples has been discontinued and the project abandoned.

DESCRIPTION OF THE WORK PERFORMED TO CHARACTERIZE THE SAMPLES

1. Ore Samples

Two samples identified as #4 and #6 were received from the off-shore Nova Scotia sea bed.

Sample #4 was contained in 17-45 gallon drums and weighed 4.425 tonnes. It was collected from the East Point Ledge, N.S. area.

Sample #6 was contained in 4-45 gallon drums and weighed 1.093 tonnes. It was collected from the Blue Rocks, N.S. area.

A map showing the location of the samples' origins is given in Appendix 1.

2. Samples Preparation

Each sample was separately prepared for assay and testwork, as follows:

a) The material was wet classified on a 1.7 mm screen. All the water resulting from screening was carefully collected, decanted and examined for possible gold entrainment. No trace of gold was found. The material was screened to remove the coarse, waste particles (gravel, shells, etc) that would otherwise create unnecessary difficulties in the further steps of sample preparation.

b) Both +1.7 and -1.7 mm fractions were air dried and weighed.

The weight distribution of the classified material is given in Table 1.

Table 1 - Results of classification at 1.7 mm

Sample	Size Fraction, mm	Weight kg	Weight %
4	+1.7	3499	79.1
	-1.7	926	20.9
	Total	4425	100.0
6	+1.7	262	24.0
	-1.7	831	76.0
	Total	1093	100.0

The material in the coarse fraction ranges in size from 1.7 to approximately 100 mm.

c) The +1.7 mm fraction was stored.

d) The -1.7 mm fraction was successively reduced by quartering to representative charges of 1 kg, for chemical assay, mineralogical study and testwork.

e) One charge of 1 kg was pulverized to 100% -75 um and submitted for chemical assay.

f) Another charge of 1 kg was used to perform a sieve analysis to determine weight and metals distribution in the screen fractions.

g) The other charges, for mineralogy and testwork, were kept available awaiting the results of the chemical assay.

3. Chemical analysis

The chemical assay of the samples #4 and #6 was performed by Bondar and Clegg Company Ltd., an authorized chemical laboratory, in Ottawa.

The results of the chemical assay are presented in Table 2.

Table 2 - Head assay

Element	Sample #4	Sample #6	Assay method
Au, g/t	<0.07*	<0.07*	Fire assay + A.A.
Ag, g/t	<0.7*	<0.7*	Fire assay + Gravimetric
Fe, %	3.01	1.77	Multi acid digestion + A.A.
S, %	0.08	0.18	LECO induction furnace

* Below detection limit

An XRF, semi quantitative analysis performed on both samples did not detect any significant concentration of the main elements of interest. The results of this analysis are presented in Appendix 2.

4. Sieve analysis

Screen analysis and Au, Ag assay for each fraction were carried out to determine the particle size and precious metals distribution in the -1.7 mm material of samples #4 and #6.

The results of these determinations are given in Table 3.

Table 3 - Size distribution and Au, Ag assays

Sample #	Size Mesh	Size um	% Weight Retained Individ.	% Weight Passing Cumulative	Assay, g/t Au	Assay, g/t Ag
	+65	+212	87.5	12.5	<0.07*	<0.7*
	100	150	4.4	8.1	0.07	2.0
4	150	108	3.2	4.9	<0.07*	2.4
	400	38	2.8	2.1	<0.07*	<0.7*
	-400	-38	2.1	-	0.41	1.7
	Head		100.0	-		
	+48	+300	17.4	82.6	<0.07*	<0.7*
	65	212	6.0	76.6	<0.07*	<0.7*
	100	150	15.0	61.6	<0.07*	<0.7*
6	150	108	31.1	30.5	<0.07*	<0.7*
	200	75	18.1	12.4	<0.07*	<0.7*
	400	38	8.6	3.8	<0.07*	<0.7*
	-400	-38	3.8	-	<0.07*	<0.7*
	Head		100.0	-		

* Below detection limit

The ore particles in sample #4 were much coarser than those of sample #6. There was no significant concentration of gold or silver in any size fraction.

The sieve analyses confirmed the low gold and silver content of the samples.

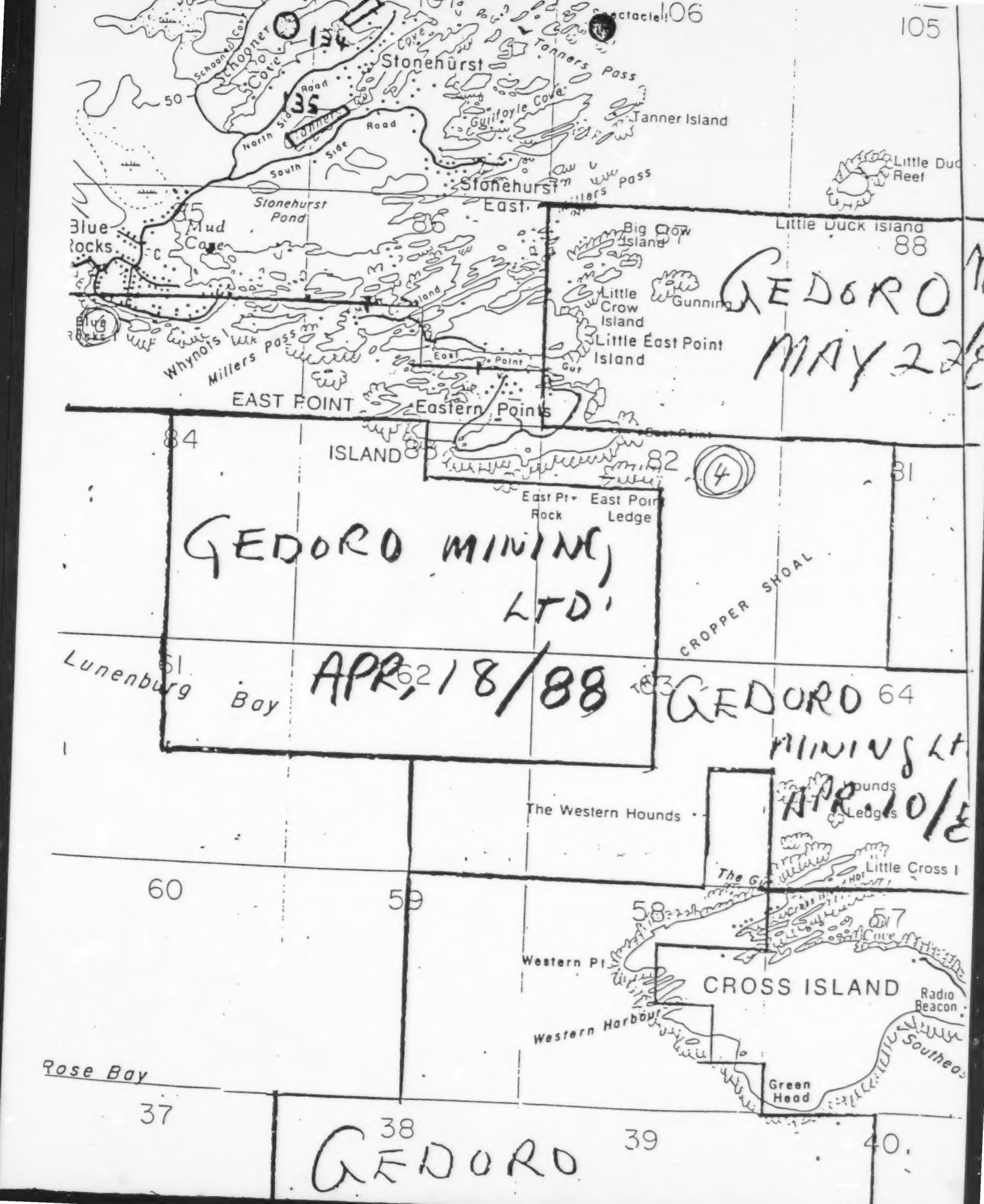
CONCLUSIONS

Direct assays performed on samples #4 and #6 collected from the Nova Scotia off-shore sea bed indicated no significant concentration of gold, silver or any other element of possible economic interest in this material. The results of subsequent determinations confirmed the low gold and silver occurrence in both samples.

Following this findings the sea bed material represented by samples #4 and #6 was considered to have no economic value, at least as regards gold and silver extraction. Therefore the research work to recover gold from samples #4 and 6 was discontinued.

Appendix 1

Location of samples collecting area



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APR. 18/88

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GEDORO MINING LTD.

APR. 10/8

GEDORO

Appendix 2

XRF, Semi quantitative analysis of samples

089-51224.4

Bondar Clegg & Company Ltd.
3420 Cannon Road
Ottawa, Ontario
Canada K1J 9K5
Phone (613) 749-2220
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Geochemical Lab Report

SEMI-QUANTITATIVE ANALYSIS

No: 1

Sample No. Barrel #4 Head

From: CANMET

Method: XRF

Date: APRIL 28 19 89

No. of Elements:

Analyst:

MAJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMA
SiO_2									X	
Al_2O_3									X	
Total Fe (Fe_2O_3)								X		
MgO							X			
CaO								X		
Na_2O						X				
K_2O								X		
TiO_2						X				
TRACE ELEMENTS (%)										
V		X								
Cr			X							
Mn				X						
Co	X									
Ni	X									
Cu	X									
Zn		X								
As	X									
Sr			X							
Y	X									
Zr			X							
Nb	X									
Mo	X									
Ag	X									
Sn	X									
Sb	X									
Ba				X						
La	X									
Ce		X								
W	X									
Pb	X									
Bi	X									
Th	X									
U	X									

089-51106.5

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[redacted]

Geochemica
Lab Repor

SEMI-QUANTITATIVE ANALYSIS

No: 1

Sample No. TEST #6 HEAD SAMPLE From: CANMET

Method: XRF Date: APRIL 19 19 8

No. of Elements: Analyst:

MAJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMA
SiO_2									X	
Al_2O_3									X	
Total Fe (Fe_2O_3)							X			
MgO						X				
CaO								X		
Na_2O							X			
K_2O							X			
TiO_2						X				
TRACE ELEMENTS (%)										
V		X								
Cr				X						
Mn				X						
Co	X									
Ni	X									
Cu	X									
Zn		X								
As	X									
Sr			X							
Y	X									
Zr			X							
Nb	X									
Mo	X									
Ag	X									
Sn	X									
Sb	X									
Ba				X						
La		X								
Ce		X								
W	X									
Pb		X								
Bi	X									
Th	X									
U	X									